Claims

1. A computer based system employing a customizable Simulation Model of an ATM/SONET Framer, for system level verification and performance characterization, comprising:

means for developing an accurate customizable behavioral model that offer sufficient parameters which can be programmed to represent Framers from different vendors;

means for providing two independently configurable components, a Receiver and a Transmitter, and

which provide testing with said multiple vendors of Framers, by changing programmable parameters of said model.

2. The system of claim 1 wherein said ATM/SONET Framer provides Receiver and one Transmit interface to the network at a SONET line rate of 155.52 Mbps(OC-3), 622.08 Mbps(OC-12) and 2488.32 Mbps(OC-48).

3. The system of claim 1 wherein said ATM and said SONET interfaces operate on different clock frequencies and represent two distinct clock domains,
and
the data interchange between the two said clock domains is achieved by means of FIFO buffer elements and associated control and status signals.

4. The system of claim 1 solves problems of observability and controllability, due to constrains stemming from the protection of proprietary data.

5. The system of claim 4 wherein said solution to said problems of observability and controllability, is to develop an accurate customized behavioral model,
and
said model offering sufficient parameters which can be programmed to represent Framers of different vendors.

6. The system of claim 4 which in addition, offers programmability, rich feature set, and two independently configurable models, one each for said transmit side and said receive side,

and

offers said programmability features of:

- SONET line rates (OC-Nc: N=1..48; OC-1=51.48 Mbps)
- Percentage of data bytes vs. overhead bytes per row
- Delays associated with clock domain synchronization
- FIFO depth and threshold (in terms of number of cells)
- Byte or word count threshold within a cell associated with FIFO status update
- UTOPIA Level-2/3
- Built-in performance checking

7. A computer based method employing a customizable Simulation Model of an ATM/SONET Framer, for system level verification and performance characterization, comprising the steps of:

developing an accurate customizable behavioral model that offer sufficient parameters which can be programmed to represent Framers from different vendors;

providing two independently configurable components, a Receiver and a Transmitter,

and

which provide testing with said multiple vendors of Framers, by changing programmable parameters of said model.

8. The method of claim 7, which in addition includes the steps of:

said ATM/Sonet Framer provides Receiver and one Transmit interface to the network at a SONET line rate of 155.52 Mbps(OC-3), 622.08 Mbps(OC-12) and 2488.32 Mbps(OC-48).

9. The method of claim 7 wherein said ATM and said SONET in interfaces, operate on different clock frequencies and represent two distinct clock domains, and

data interchange between the two said clock domains is achieved by means of FIFO buffer elements and associated control and status signals.

10. The method of claim 7 solves problems of observability and controllability, due to constraint stemming from the protection of proprietary data.

11. The method of claim 10 wherein said solution to said problems of observability and controllability, further includes the steps of:

develop an accurate customized behavioral model, and

said model offering sufficient parameters which can be programmed to represent Framers of different vendors.

12. The method of claim 10 which in addition, offers programmability, rich feature set, and two independently configurable models, one each for said transmit side and said receive side,

and

offers said programmability features of:

- SONET line rates (OC-Nc: N=1..48; OC-1=51.48 Mbps)
- Percentage of data bytes vs. overhead bytes per row
- Delays associated with clock domain synchronization
- FIFO depth and threshold (in terms of number of cells)
- Byte or word count threshold within a cell associated with FIFO status update
- UTOPIA Level-2/3